

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-2 (Canceled).

Claim 3 (Currently Amended): [[The]] A magnetic memory according to claim 2,  
~~further comprising:~~

a plurality of common bit lines; and

~~cell bit lines, each of cell bit lines being branched from each common bit line for each memory cell, the data storage portion being provided at least one portion of an outer periphery of the cell bit line, the magneto-resistance effect element being disposed in the vicinity of the data storage portion and the cell bit line functioning as the writing wire~~

a plurality of memory cells, each memory cell comprising,

at least one cell bit line being branched from a corresponding one of the common bit lines and functioning as a writing wire,

at least one data storage portion, provided on at least one portion of an outer periphery of the cell bit line, which comprises a ferromagnetic material whose magnetization direction can be inverted by causing a current to flow in the cell bit line,

at least one magneto-resistance effect element, disposed in the vicinity of the data storage portion, which senses the magnetization direction of the data storage portion, and

a writing selection transistor which is connected at one of a source and a drain thereof with the at least one cell bit line.

Claim 4 (Currently Amended): The magnetic memory according to claim 3, wherein the data storage portion is provided so as to surround at least three directions of four directions of the outer periphery of the ~~writing wire cell bit line~~, the magneto-resistance effect element is disposed in the remaining one direction of the outer periphery, the magnetization direction of the data storage portion is substantially parallel to a circumferential direction of the ~~writing wire cell bit line~~, and the magnetization direction appearing at both ends of the data storage portion is sensed by the magneto-resistance effect element.

Claim 5 (Currently Amended): The magnetic memory according to claim 3, wherein the data storage portion is provided so as to surround four directions of the outer periphery of the ~~writing wire cell bit line~~, the magneto-resistance effect element is provided so as to correspond to one direction of the four directions, and the data storage portion and a magnetization free layer of the magneto-resistance effect element are magnetically coupled.

Claim 6 (Original): The magnetic memory according to claim 3, wherein a magnetization free layer of the magneto-resistance effect element contacts with the data storage portion.

Claim 7 (Original): The magnetic memory according to claim 3, further comprising a sense assist wire which is provided in the vicinity of the magneto-resistance effect element and generates a magnetic field due to a current flowing therein and which assists sensing of the magnetization direction of the data storage portion.

Claim 8 (Original): The magnetic memory according to claim 3, further comprising a write assist line which is provided in the vicinity of the data storage portion so as to be

substantially perpendicular to the cell bit line and generates a magnetic field in a direction perpendicular to the magnetization direction of the data storage portion.

Claim 9 (Currently Amended): [[The]] A magnetic memory according to claim 3,  
comprising:

a plurality of common bit lines; and

a plurality of memory cells, each memory cell comprising,

at least one cell bit line being branched from a corresponding one of the  
common bit lines and functioning as a writing wire,

at least one data storage portion, provided on at least one portion of an outer  
periphery of the cell bit line, which comprises a ferromagnetic material whose  
magnetization direction can be inverted by causing a current to flow in the cell bit  
line,

at least one magneto-resistance effect element, disposed in the vicinity of the  
data storage portion, which senses the magnetization direction of the data storage  
portion, and

a writing selection transistor which is connected at one of a source and a drain  
thereof with the at least one cell bit line,

wherein the cell bit line has a first wiring portion which is branched from a corresponding one of the common bit lines, a second wiring portion which is provided along a side portion of the magneto-resistance effect element via an insulating film and has one end connected to the first wiring portion, and a third wiring portion which has one end connected to the other end of the second wiring portion and is provided substantially in parallel with the first wiring portion such that the third wiring portion and the first wiring portion sandwich the magneto-resistance effect element, and

wherein the magneto-resistance effect element is electrically connected to one of the first wiring portion and the third wiring portion, the data storage portion has a first storage portion provided on an outer peripheral portion of the first wiring portion and a second storage portion provided on an outer peripheral portion of the third wiring portion, and the magneto-resistance effect element is provided in the vicinity of the first storage portion and in the vicinity of the second storage portion.

Claim 10 (Currently Amended): [[The]] A magnetic memory according to claim 3, comprising:

a plurality of common bit lines; and

a plurality of memory cells, each memory cell comprising,

at least one cell bit line being branched from a corresponding one of the common bit lines and functioning as a writing wire,

at least one data storage portion, provided on at least one portion of an outer periphery of the cell bit line, which comprises a ferromagnetic material whose magnetization direction can be inverted by causing a current to flow in the cell bit line,

first and second magneto-resistance effect elements which sense the magnetization direction of the data storage portion, and

a writing selection transistor which is connected at one of a source and a drain thereof with the at least one cell bit line,

wherein the cell bit line comprises a first wiring portion, a second wiring portion, and a third wiring portion, the first wiring portion being branched from [[a]] the corresponding one of the common bit lines and electrically connected to [[a]] the first magneto-resistance effect element, the second wiring portion being provided along a side portion of the first

magneto-resistance effect element via an insulating film and having one end connected to the first wiring portion, and the third wiring portion having one end connected to the other end of the second wiring portion, being provided substantially in parallel with the first wiring portion and being electrically connected with [[a]] the second magneto-resistance effect element,

the data storage portion has a first storage portion and a second storage portion, the first storage portion provided on an outer peripheral portion of the first wiring portion and the second storage portion provided on an outer peripheral portion of the third wiring portion, and

the first magneto-resistance effect element is provided in the vicinity of the first storage portion and the second magneto-resistance effect element is provided in the vicinity of the second storage portion.

Claim 11 (Original): The magnetic memory according to claim 10, further comprising a differential amplifier which reads outputs of the first and second magneto-resistance effect element in a differential manner.

Claim 12 (Currently Amended): [[The]] A magnetic memory according to claim 3, comprising:

a plurality of common bit lines; and

a plurality of memory cells, each memory cell comprising,

at least one cell bit line being branched from a corresponding one of the common bit lines and functioning as a writing wire,

at least one data storage portion, provided on at least one portion of an outer periphery of the cell bit line, which comprises a ferromagnetic material whose

magnetization direction can be inverted by causing a current to flow in the cell bit line,

at least one magneto-resistance effect element, disposed in the vicinity of the data storage portion, which senses the magnetization direction of the data storage portion, and

a writing selection transistor which is connected at one of a source and a drain thereof with the at least one cell bit line,

wherein each memory cell is caused to correspond to first and second common bit lines, the cell bit line has a first wiring portion which is branched from the first common bit line to be electrically connected with the magneto-resistance effect element and a second wiring portion which is branched from the second common bit line and has a portion provided substantially in parallel with the first wiring portion such that the first wiring portion and the second wiring portion sandwich the magneto-resistance effect element, the data storage portion comprises [[a]] first and second data storage portions provided on at least one portion of an outer periphery of the first and second wiring portions respectively, the magneto-resistance effect element is provided in the vicinity of the first storage portion and in the vicinity of the second storage portion, the magneto-resistance effect element has a magnetization fixed layer in which magnetization direction has been fixed and a magnetization free layer which senses the magnetization directions of the first storage portion and the second storage portion, and a magnetization easy axis of the magnetization fixed layer and a magnetization easy axis of the magnetization free layer are substantially perpendicular to each other.

Claims 13-20 (Canceled).

Claim 21 (New): A magnetic memory comprising:

a plurality of common bit lines; and

a plurality of memory cells, each memory cell comprising,

at least one cell bit line being branched from a corresponding one of the common bit lines and functioning as a writing wire,

at least one data storage portion, provided on at least one portion of an outer periphery of the cell bit line, which comprises a ferromagnetic material whose magnetization direction can be inverted by causing a current to flow in the cell bit line,

first and second magneto-resistance effect elements each disposed in the vicinity of the data storage portion, which sense the magnetization direction of the data storage portion respectively, and

a writing selection transistor which is connected at one of a source and a drain thereof with the at least one cell bit line.

Claim 22 (New): The magnetic memory according to claim 21, further comprising a differential amplifier which reads outputs of the first and second magneto-resistance effect elements in a differential manner.